NASA Procedural Requirements

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Subject: Facility Project Implementation Guide

Responsible Office: Facilities Engineering and Real Property Division

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CHAPTER 2: NASA's Facilities Program

This chapter explains NASA's facilities program including describing the types of projects, the issuing of fiscal year program guidelines, development of the individual projects at the Centers, submittal of the projects to Headquarters for review and approval, and project funding and execution. All of these functions are a part of NASA's facilities program.

2.1 Facility Program Content

The annual facility program is part of the Agency's 5-year budget described in NPG 1000.2, NASA Strategic Management Handbook. The CoF program includes projects and real estate acquisitions to accomplish NASA missions. Funds in other budget line items that meet Authorization Act guidelines may be used for facility projects not included in the CoF budget. Facility projects are for new construction, facility revitalization (repair, restoration, rehabilitation, and modification of existing facilities), and facility work at other than Agency installations. The dollar thresholds for various facilities categories described in the following paragraphs and in Figure 2-1, Facility Project Appropriations Categories, are current, but are subject to change in the NASA Annual Authorization Act.

2.1.1 CoF Projects. The projects in the budget line item are divided into categories of discrete projects, which are facility projects exceeding $1.5 million, and minor projects, which includes minor revitalization and construction projects exceeding $500 thousand but not over $1.5 million. The categories are further divided as follows:

a. Discrete projects include the following:

(1) Program Direct (PD) Projects - Facility projects funded by programs to satisfy specific program requirements,

(2) Institutional Projects - Projects required for construction and facility revitalization (repair, rehabilitation, and modification) of the basic infrastructure (roads, utilities) or institutional (support multiple users and/or activities) facilities, and

(3) Emergency Repair Projects - Emergency repairs may be funded from CoF in accordance with Section 309(b), National Aeronautics and Space Act, as amended, and are defined as discrete work regardless of the cost.

b. Minor revitalization and construction projects include the following:

(1) Repair of facilities to restore them to meet their intended purpose, and

(2) Rehabilitation and modification of facilities to renew and help preserve and enhance the capabilities and usefulness of existing facilities and ensure the safe, economical, and efficient use of the NASA physical plant.

Facility Project Categories Funded with NASA Appropriations ($K)

Facility Project Category	Facility Project Approval Levels and Documentation Requirements $ in K		
	Center Approved Non CoF	Congressional Approved Program Headquarters Project Approval	
		Minor CoF	Discrete CoF (1), (3), (4) & (5)
	$50	$500	$1,500
Minor Construction and Revitalization (Repair, Restoration, Rehabilitation, & Modification) (2) & (3)	Center Approved Form 1509 and if over $75,000 Form 1510 (Copies to Headquarters, Code JX)	Forms 1509 and 1510 Required for Minor Projects	Long Form Writeup and Forms 1509 and 1510 Required for Discrete Projects
Land Acquisition (4)	See NPG 8800.15, *Real Estate Management Program Implementation Manual* for Documentation Required		

(1) Emergency repair may be funded from CoF (Section 309(b), National Aeronautics and Space Act, as amended). Projects so funded are defined as discrete work at any cost.

(2) Facility work (other than acquisition of land) which may be required at locations other than NASA Centers or Component Facilities for the performance of program contracts may be accomplished under conditions specified in the current authorization Act.

(3) Unforeseen major work may be accomplished by use of statutory reprogramming as provided in the current Authorization Act.

(4) Land acquisition at any cost, except when acquired for environmental compliance purposes, is defined as discrete work.

(5) Discrete CoF projects are authorized by line item or by the authority stated in items 1 and 3 above.

Figure 2-1 Facility Project Appropriations Categories

(3) New construction to support specific programs and institutional requirements.

2.1.2 Non-CoF Projects. NASA resources may be used to fund facility projects (not exceeding $500,000) including constructing new facilities and repairing, rehabilitating, or modifying existing facilities. These non-CoF projects include PD facility work, items of a capital nature (other than land acquisition), and facility work at other than Agency installations as specified in the Authorization Act. This category also includes facility projects funded from other than NASA appropriations, and those provided for in accordance with NPD 9050.6, NASA Exchange Activities .

2.2 CoF Program Development

The CoF program is developed through a process involving guidance from OMB and/or the President's budget to Congress, NASA Headquarters and Enterprise guidance, and development of proposed projects by the NASA Centers based on the guidance. Program development includes not only the development of the proposed facility projects but also the management and approval of the projects for inclusion in the Agency's budget submittal. This development process is described in the following paragraphs and depicted in Figure 2-2, CoF Program Management.

2.2.1 Guidelines. Each year NASA's CFO considers: OMB guidance and/or the President's budget to Congress and other policy guidance (including Strategic Plan, Performance Plan, Administration and Congressional direction, applicable policies, and NASA Administrator's direction) to develop and issue a Program Operating Plan (POP) electronic call. This call is sent to the Enterprises (Human Space Flight (HSF) and Science, Aerospace and Technology (SAT)), Institutional Program Offices (IPO) and Functional Offices (FO) for their specific guidelines for inclusion in the POP call to the Centers. These specific guidelines are incorporated in the POP call to the Centers which also includes directions, formats, and due dates for preparing and submitting budget data. POP document content and formats are based on Enterprise/IPO/FO/Agency data requirements and/or needs and OMB-specific guidance.

2.2.2 POP Center Submittal. Centers using the POP guidelines issued by the CFO and their facility condition and requirement evaluations prepare their facility projects for submission in the Center's CoF 5-year plan. The projects are developed in accordance with the POP guidance and Chapter 3, Project Planning/Development. The documentation for the CoF projects, prepared in accordance with POP guidelines and paragraph 2.6, Budget/Approval Documentation, are assembled into the Center's POP 5-year plan submittal. The POP submittal includes the Center's CoF 5-year plan of discrete and minor projects for program-related and other facilities work that are to be funded in the CoF budget (see paragraph 2.2.5, Five-Year Plan, for details) and the Center's Facility Planning and Design (FP&D) funding requirements. Each year as additional information on facility characteristics or requirements on a project is developed and as guidelines are modified, the project documentation is updated.

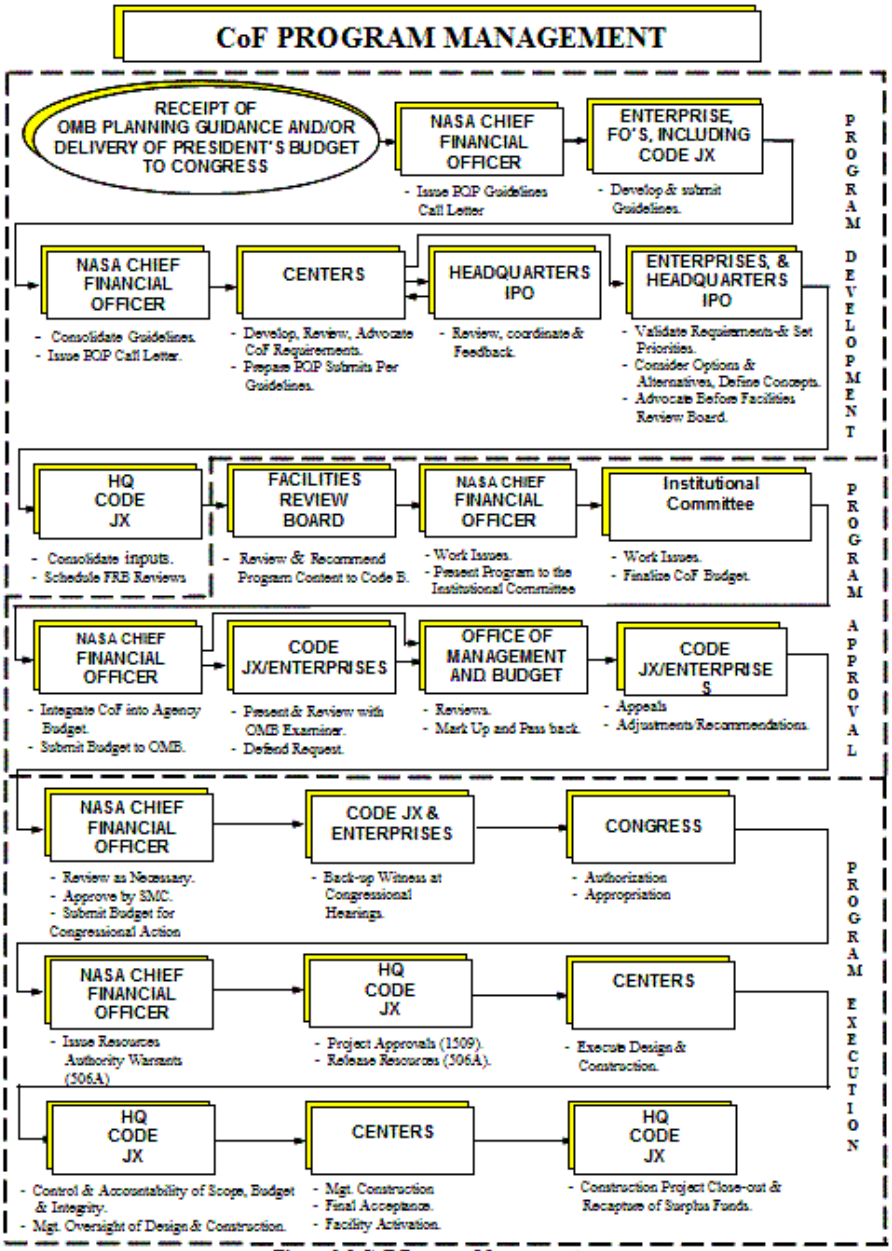


Figure 2-2 CoF Program Management

2.2.3 Fragmentation. In establishing the scope of a facility project, care must be exercised to include all of the needs generated by the same set of circumstances in a single project to avoid fragmentation or even the appearance of fragmentation (see Appendix A, Definitions, for "fragmentation" and "facility project" definitions). Work cannot be fragmented (separated) solely to avoid approval requirements.

2.2.3.1 Establishing Project Scope. Establishing a project's scope depends on the purposes served and the events/circumstances that generated the need for each project. For example, if the lighting system in a building required upgrade throughout the entire building, then this work should be considered as a single facility project. However, if the lighting needs to be improved to a specific level in a given functionally identifiable area (e.g., computer room) and to another level in a functionally different area (e.g., supply service room), then the work could be considered as two separate projects provided the areas are not contiguous.

2.2.3.2 Waiting Period Between Projects. Successive projects within a single facility shall have 90 days separation between beneficial occupancy and the notice to proceed. The reason for this requirement is to avoid the appearance of fragmentation. Headquarters Director, Facilities Engineering Division, must approve exceptions.

2.2.4 Incremental Programming for Facility Requirements. The development of a facility project proposal for the annual CoF program to satisfy a program requirement includes full disclosure of the scope and cost (see Appendix A, Definitions, Full Disclosure Concept) of the total facility requirements at the specific location. The total facility requirements at the location may include individual facility projects whose scope and need dates are significantly different. These projects should be proposed for different fiscal year submissions and will become the basis for the facility increments to be included over a number of fiscal years. Each increment must be planned to provide a usable facility on a schedule that meets the need date established by the functional requirements.

2.2.4.1 If the planned increment in any one fiscal year does not yield a completely usable facility, the project scope shall be clearly defined for that program year. A limitation of funds clause must be included in the solicitation. (See NASA FAR Supplement, 48 CFR Chapter 18 Part 1852, Subpart 1852.232-77, Limitation of Funds - Fixed-Price Contract.)

2.2.4.2 For proposed CoF projects, which are an increment of a larger total requirement, the individual project justification must highlight this relationship and include the following:

a. A description of the functions to be carried out in the proposed CoF project and how this project is part of the total requirement,

b. An evaluation of mission requirements and engineering and economic factors that are relevant to the incremental plan, and

c. A list of all known future projects that are proposed to meet the total requirement.

2.2.5 Five-Year Plan. A Center's 5-year plan identifies facility project needs that are projected to be required to achieve assigned mission objectives, to provide institutional support, and to revitalize existing facilities. The 5-year plan is updated annually based upon improved information about mission requirements, existing facilities, budget adjustments, advances in R&D, and mission changes. The plan is developed and submitted in accordance with the annual POP guidelines issued by NASA Office of the CFO (see paragraph 2.2.1, Guidelines). An example of a POP 5-year plan submission format is shown in Appendix C Figure C.15, Example - POP 5-Year Plan Submittal.

2.2.5.1 The Center Director, with input from Program Managers, planning, and engineering, shall integrate all program and institutional requirements to be within projected resources (workforce and funding) for each year in the 5-year plan.

2.2.5.2 Format. The 5-year plan format is provided in the annual POP guidelines. The plan includes the budget year (BY) estimate and the four subsequent out years (i.e., BY+1, BY+2, BY+3, and BY+4) as shown in Figure 2-3, CoF 5-Year Plan.

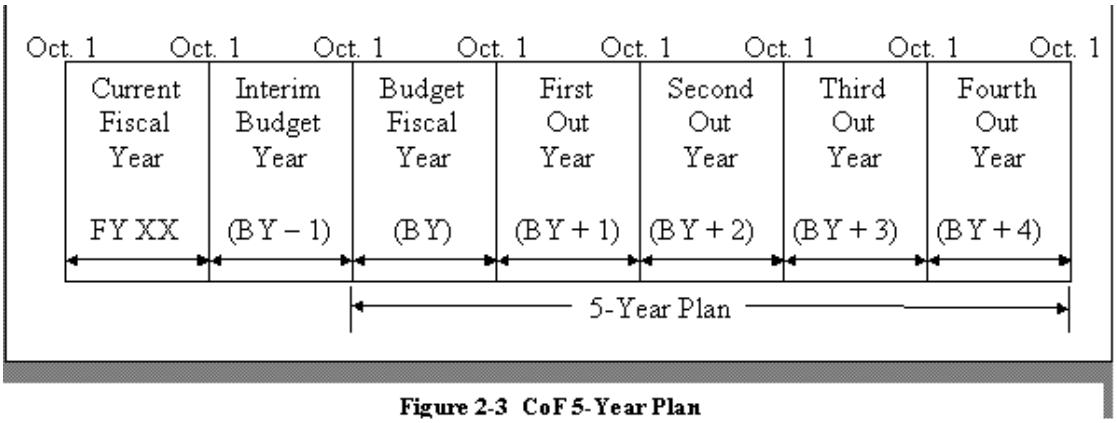


Figure 2-3 CoF 5-Year Plan

2.2.5.3 Scope. The 5-year plan shall include discrete and minor revitalization and construction projects in accordance with the POP guidelines with priorities assigned as specified in the guidelines. Updated NASA Form 1509, Facility Project - Brief Project Document, and NASA Form 1510, Facility Project Cost Estimate, are required for each BY project included in the plan. In addition a long form writeup (see paragraph 2.6.5, Long Form Writeup, and Appendix C, Forms and Instructions) is required for each discrete project in the BY.

2.2.5.4 Headquarters Enterprise and Functional Offices will review the facility projects identified in the 5-year plan and provide guidance and direction to define future facility requirements, including the use of existing facilities; identify facility projects that require additional action; and confirm CoF project advocate responsibilities. This review should include discussions across organizational lines for the purpose of eliminating duplication of facilities or program requirements either within NASA or the private sector. The Headquarters Director, Facilities Engineering Division, uses the Center submission and results of Headquarters reviews to forecast future CoF budgets and the appropriate levels of facility planning and design effort.

2.2.5.5 Refer to Figure 2-4, CoF Project Cycle, for the schedule for development, submission, and review of the CoF Program including the 5-year plan.

2.3 Public Release

Information regarding facilities projects (including sub-projects and/or work packages) proposed for current or future CoF programs, regardless of the stage of development, must not be disclosed to the general public until released by the appropriate committees of Congress.

2.4 CoF Program Approval

The CoF program approval is described in the following paragraphs and depicted in Figure 2-2, CoF Program Management.

2.4.1 Center's Approval. The Center's POP and facility project documentation are reviewed and approved at the Center in accordance with the POP guidelines and the Center's procedures and then are forwarded to the Headquarters IPO for review and feedback. The Center then makes appropriate updates and submits the POP and CoF documentation to the NASA Headquarters IPO and Enterprises for review and approval.

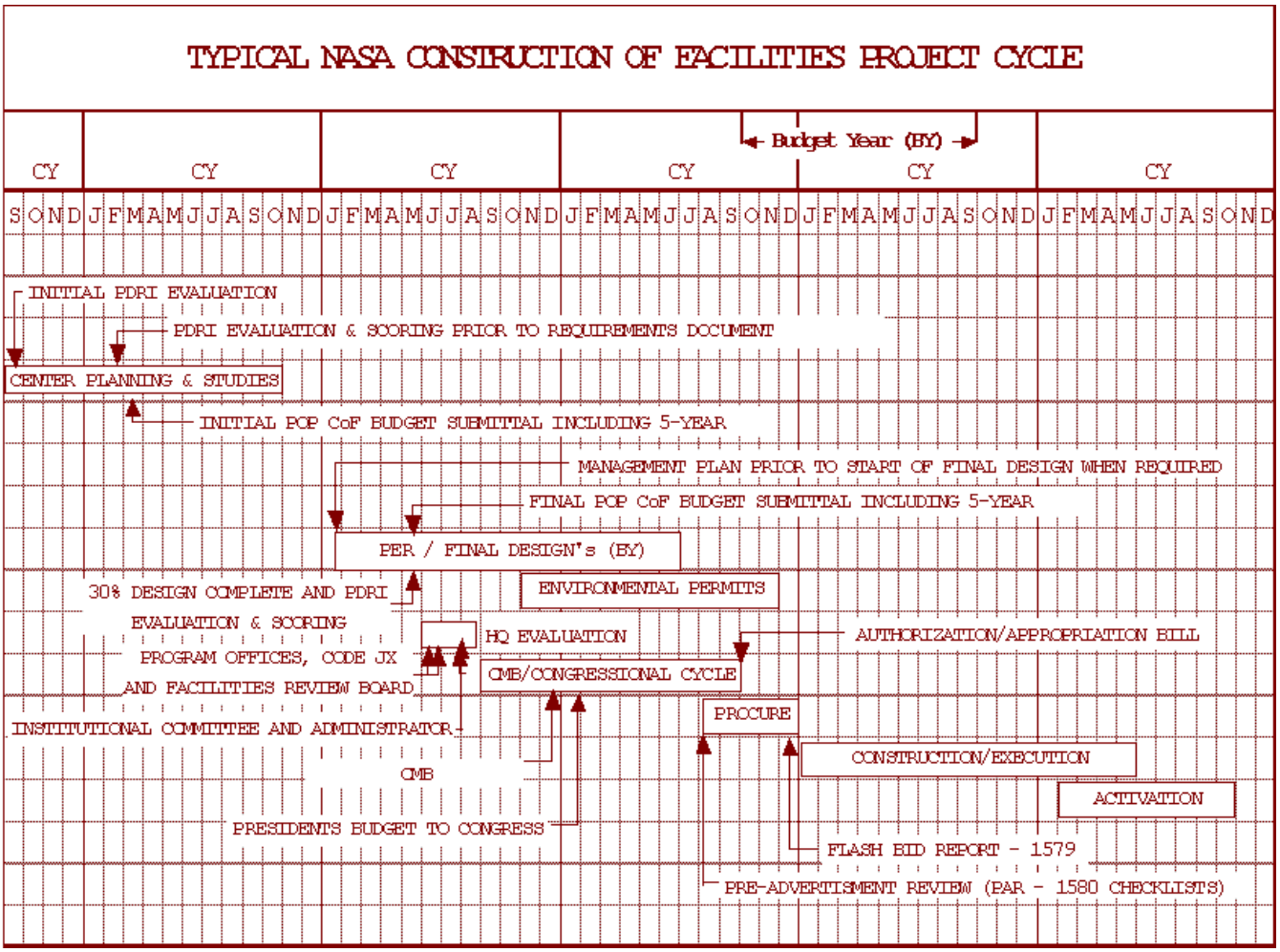
2.4.2 NASA Headquarters Action. Each Program Office, Enterprise, FO, Code JX, CFO, Facilities Review Board, Institutional Committee, and Executive Committee at Headquarters reviews the Center POP submissions. Only those projects supported by this review process and the Administrator are included in the budget proposal to the OMB.

2.4.3 OMB Reviews. OMB reviews NASA's submittal and responds with questions or requests for data. After NASA submits the additional information OMB provides a budget "markup" for use in preparing NASA's final submission.

2.4.4 NASA Final Submission. Utilizing the OMB budget "markup," NASA prepares and submits a final budget to OMB. Following OMB approval, the NASA budget is incorporated into the President's budget for submission to Congress.

2.4.5 Facility Project Authorization and Appropriations. Utilizing the President's budget submission, the Senate and House of Representatives authorize and appropriate CoF projects. Separate committees in both the Senate and House of Representatives develop their own authorization and appropriation bills. The committees may request additional information to support their reviews. The Senate and House of Representatives eventually reach agreement on final authorization and appropriation bills which are sent to the President for approval. After the President signs both bills into law, OMB is able to apportion funds to NASA for the approved discrete projects and the minor program.

2.4.6 Project Oversight. As the CoF program is reviewed and developed, the Headquarters Director, Facilities Engineering Division, and/or the related IPO's, will inform the Centers concerning the status of proposed facility projects. Refer to Figure 2-2, Construction of Facilities Program Management, for CoF program management oversight details.



2.5 Facility Program Execution

It is NASA policy for "Early fiscal year award of all construction projects approved and funded in the year that construction resources are received" (see NPD 8820.2A, Design and Construction of Facilities). To implement this policy, Centers must expeditiously proceed to implement approved projects or chance a project being placed at-risk (see Appendix A, Definitions) and forfeiting its funding. Facility program execution is described in the following paragraphs and is depicted in Figure 2-2, Construction of Facilities Program Management.

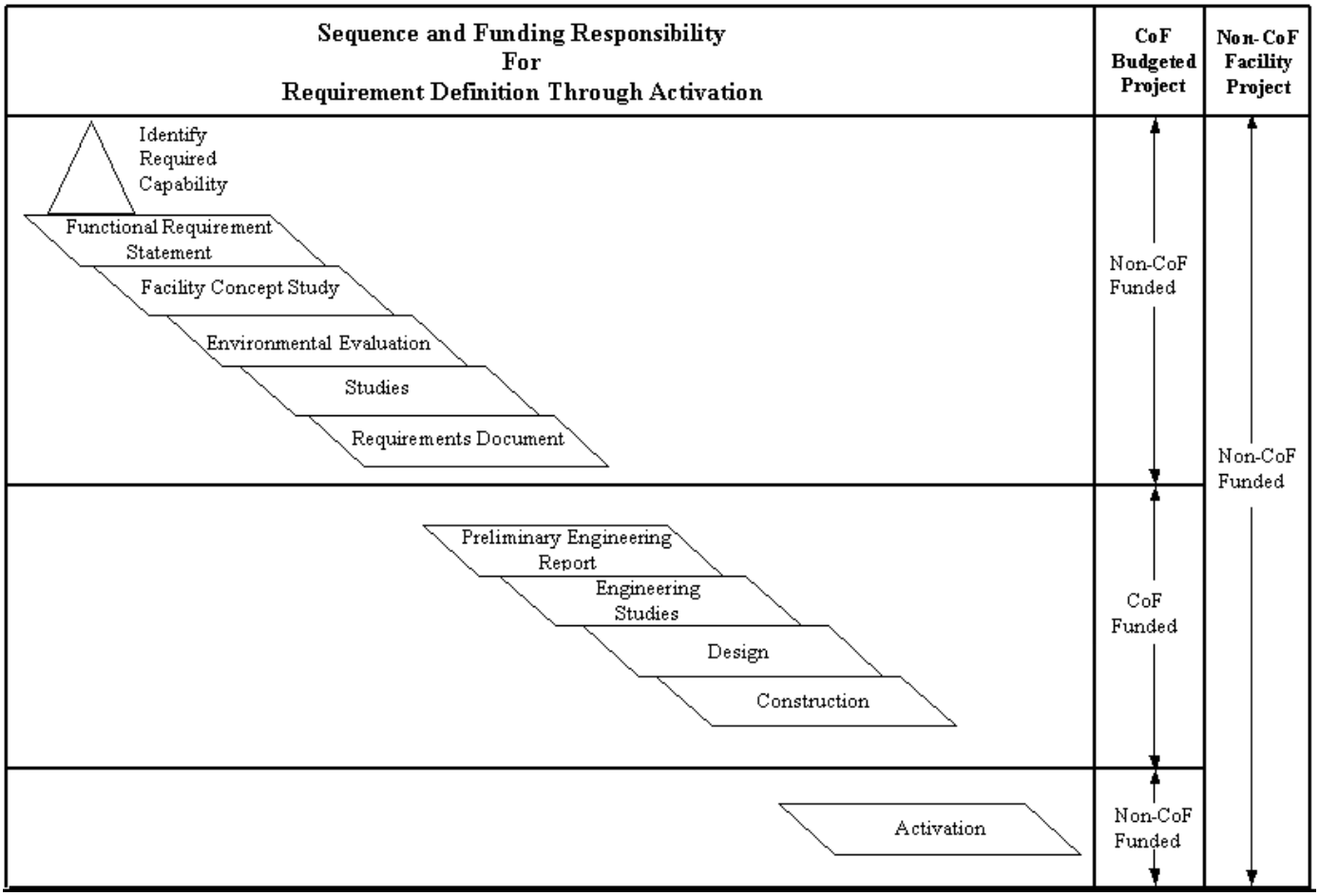
2.5.1 Warranting and Apportioning of Funds. Appropriated funds are made available for expenditure upon issuance by the Treasury Department of an appropriation warrant, which establishes expenditure limits. The OMB exercises further control over the use of these funds by means of its apportionment process. The complete CoF project cycle details are shown in Figure 2-4, CoF Project Cycle.

2.5.2 Financial Resources for Facility Projects. The annual appropriations and authorization Acts are the principal funding authorities for significant facility projects. This funding is for the preliminary engineering, design, and construction of the projects. Identifying, planning, and developing the requirement into a proposed project and its activation after construction are paid for from non-CoF funds (see Figure 2-5, Facilities Project Activities and Funding). Non-CoF funds, within certain statutory and fiscal limitations (see Figure 2-1, Facility Project Appropriations Categories'), can be used for engineering and CoF projects. In some instances, facility work at a Center will be financed by another governmental agency in accordance with Agency agreements, the private sector as specified in contracts, or a nonappropriated fund activity such as a NASA Exchange. Regardless of the source of funds, all facility projects are approved in accordance with the delegation of project approval authority contained in NPD 7330.1F, Approval Authorities for Facility Projects.

2.5.3 Facility Project Fiscal Management.

2.5.3.1 The fiscal funding thresholds for discrete, minor, and routine facility work, as reflected in the definitions in Appendix A and

in Figure 2-1, Facility Project Appropriations Categories, are based on the annual authorization and appropriation legislation; and the National Aeronautics and Space Act of 1958, as amended. Approving authorities, as specified in NPD 7330.1 (for hyperlink see paragraph 2.5.2), Approval Authorities for Facility Projects, are responsible for ensuring conformance with applicable legislated limitations.



2.5.3.2 NASA Form 1509, Facility Project - Brief Project Document, must be approved in accordance with NPD 7330.1 (for hyperlink see paragraph 2.5.2) prior to starting work on any facility project with an estimated cost of $50,000 or more. NASA Form 1510, Facility Project Cost Estimate, is required to accompany the 1509 for each facility project estimated to cost $75,000 or more. The documents should be prepared by the organization requesting approval in accordance with the instructions in paragraph 2.6, Budget/Approval Documentation, and Appendix C, Forms and Instructions. For discrete projects, the facility cost estimate listed on the approved NASA Form 1509 is the maximum that can be expended on the project without further approval. The increase must be approved in accordance with the authority delegated by NPD 7330.1 (for hyperlink see paragraph 2.5.2) before additional obligations may be incurred. Provisions for increases in cost estimates for the minor program are provided on the Minor Facility Projects Summary Brief Project Document, Form 800/01 (see AppendixC) at the time of issue.

2.5.3.3 For all CoF projects, Centers request funds by submitting NASA Forms 1509 and 1510.

2.5.3.4 In addition to the approvals discussed above, the Center must receive a NASA Form 506A, Resources Authority Warrant, from Headquarters Code JX. The warrants grant authority to initiate, commit, obligate, and outlay funds allotted on NASA Form 504 (see paragraph 2.5.3.5). The warrant is based upon requests received from the Center to implement projects (i.e., updated Forms 1509 and 1510 signed by the Center senior facility manager) or to initiate or continue planning for proposed projects. Each release is supported by a project approval document. In addition, for the minor programs, a Minor Facility Projects Summary Brief Project Document, NASA Form 800/01 is issued. This Summary Brief Project Document provides the stipulations for project implementation including cost limitations.

2.5.3.5 The Center must also receive a NASA Form 504 from the NASA CFO/Comptroller providing funds for the Resources Authority Warrant (NASA Form 506A) before any obligations can be incurred.

2.5.4 Facility Project Implementation Philosophy. NASA desires to be a "customer of choice" of the construction contractor community, and seeks to treat construction contractors fairly and professionally. NASA's construction processes are not static; they are continually improving as NASA seeks out and implements the best practices in the construction industry. NASA emphasizes preproject planning as a means of defining project cost, requirements, and goals and as the "umbrella" process within which a number of other best practices are implemented. These practices include partnering (see NFS, 48 CFR, Chapter 18, Part 1836, Subpart 1836.70), constructability reviews, value engineering, and sustainability that encompasses sustainable design, maintainable design, building commissioning, and facility aspects of safety and security (see Appendix G, Sustainability).

2.5.5 Procurement. Most projects require the services of an Architect Engineer (A-E) firm for the design and a contractor for construction. The following Government procurement regulations are used in acquiring these services:

2.5.5.1 Architect Engineer (A-E) Contracts. NASA utilizes A-E firms to prepare Preliminary Engineering Reports (PER) and designs and to perform engineering studies and other engineering tasks. Contracting for A-E services involves qualification based

selection boards and negotiated price arrangements in accordance with Federal Acquisition Regulations (FAR) 36 Subpart 36.6, Architect-Engineer Services) and the NASA FAR Supplement (NFS), 48 CFR Chapter 18 Part 1836, Subpart 1836.6. See paragraph 4.3.3.4, Selection of Architect-Engineers, for selection details.

2.5.5.2 Construction Contracts. Competitive fixed price contracts are preferred for construction work. The Federal Acquisition Regulations (FAR) (48 CFR Chapter 1, Part 36) and the NFS, Part 1836 govern NASA construction contracts. These regulations accommodate a broad range of acquisition and business strategies. Each project's strategy must be carefully planned and coordinated with the Center's procurement office. An example of another approach sometimes used is to award a construction contract to the firm that designed the project (or its subsidiaries or affiliates). This may be used only "if the contract is awarded on the basis of performance specifications for the construction of a facility, and it requires the contractor to furnish construction drawings, specifications, or site adaptation drawings of the facility." See NFS, Part 1836 paragraph 1836.209, for details on this approach.

2.5.6 Project Design.

2.5.6.1 The facility project shall be designed to meet the approved requirements and scope. See Chapter 4, Design for details.

2.5.6.2 The Center Director or designee has approval authority for a project's technical design. Either signature on the drawings indicates approval of the design. The approval certifies that the design meets the functional requirements and scope within the approved budget. In the exercise of this authority, the Director or designee shall ensure that the facility users and safety, health, environmental, maintenance, and energy conservation offices participate in the requirements and project development, and design reviews described in Chapter 3, Project Planning/Development; and Chapter4, Design. Two areas with special requirements are the following:

a. The Code of Federal Regulations (CFR), 14 CFR Part 1216 , requires an environmental analysis for each project and an environmental assessment for each discrete project unless the action is one normally requiring an environmental impact statement or the action is categorically excluded, and

b. The CFR, 10 CFR Part 434, Energy Code for New Federal Commercial and Multi-Family High Rise Residential Buildings, establishes energy conservation performance standards that are mandatory for design of Federal Buildings.

2.5.7 Construction. This phase of implementing a facility project involves the construction of the designed facility and checkout of the constructed facility to ensure that it meets the requirements of the contract documentation. This activity physically provides the approved facility for activation and operations. The steps in the construction process are as follows:

a. Obtain funds,

b. Contract for construction (see paragraph 2.5.5.2, Construction Contracts),

c. Manage the construction contract assuring the facility is constructed in accordance with the design and constructability principles are utilized, and

d. Checkout and accept the constructed facility for activation.

See Chapter 5, Construction, for details.

2.5.8 Activation. Activation is the process that normally follows facility construction. This phase of the facility acquisition process entails the outfitting, testing, and inspection of the facility and its equipment and systems to ensure the facility performs its intended function. In addition, activation may require O&M training and certification in complex technical projects. Following activation the facility becomes the responsibility of the user and the O&M organizations. See Chapter 6, Activation, for details.

2.6 Budget/Approval Documentation

2.6.1 Full Disclosure Policy on Projects. The documentation supporting a facility project shall identify and disclose all plans, intentions, and costs for the proposed facility. This shall include a complete description of the function and scope of the facility and the financial resources including costs of related equipment needed to provide an operable facility for the intended purpose (see Appendix A, Definitions, Full Disclosure Concept).

2.6.2 Initial CoF Project Submittal. Although a project may have been listed in a 5-year plan submission for several years the initial submittal of a CoF project to obtain PER and/or design funds normally occurs 2 years before the budget year submittal. NASA Forms 1509, Facility Project Brief Project Document, and 1510, Facility Project Cost Estimate, must be submitted when requesting these funds.

2.6.3 Final CoF Project Submittal. In preparing the POP CoF program documentation for NASA review, approval, and submission for OMB and congressional review the following documents that define the functional requirement and describe the proposed facility project are required as appropriate:

a. For discrete facility projects - a one-page long form writeup and updated NASA Forms 1509, Facility Project - Brief Project Document, and 1510, Facility Project Cost Estimate, Life-Cycle Cost Analysis (LCCA), and

b. For minor facility projects Updated NASA Forms 1509 and 1510.

2.6.4 Documentation Requirements for Resource Realignment Action. Facility needs will surface that are outside the authority of the Center and out of the normal budget cycle. Statutory authority for accomplishing these resource adjustments is contained in the Annual Authorization Act. NASA approval authorities for these resource adjustments are stated in NPD 7330.1 (for hyperlink see paragraph 2.5.2), Approval Authorities for Facility Projects. When the Center Director determines that a resource realignment action is needed the following documentation must be submitted to Headquarters:

a. The following are required for all realignment actions:

(1) Letter from the Center Director requesting authority outlining the purpose and scope including cost of the project, and identifying why the action cannot be resolved locally, and

(2) Other information, which would assist in verifying the need for the project.

b. The following are required for minor program upward cost variations above 25-percent , not to exceed statutory limits; discrete project upward cost variations over authorized amounts; and items of a capital nature at locations other than NASA installations

up to $1,500,000:

(1) NASA Form 1509, and

(2) NASA Form 1510.

c. The following are required for items of a capital nature at locations other than NASA installations over $1,500,000, statutory reprogramming, and for emergency repairs:

(1) Long form writeup,

(2) NASA Form 1509, and

(3) NASA Form 1510.

d. See paragraphs 2.6.5, 2.6.6 and 2.6.7 for preparation details on long form writeups and Forms 1509 and 1510, respectively.

2.6.5 Long Form Writeup. The long form writeup must include the most current project requirements, scope, and cost information. After the project is transmitted to Congress, no further revisions to the writeup will be made. NASA Forms 1509 and 1510 shall be used to incorporate subsequent project changes. The long form writeup format and instructions are provided in Appendix C, Forms and Instructions.

2.6.6 NASA Forms 1509 and 1510 The NASA Forms 1509 and 1510 are two intra-agency documents used throughout the facility project implementation process. The information contained on these forms must be updated as changes occur in requirements definition, scope, or cost.

2.6.7 NASA Form 1509.

2.6.7.1 NASA Form 1509 is used for documenting and approving facility projects from inception to completion for all facility projects estimated to cost $50,000 or more regardless of location or source of funding. The 1509 approval authorities are stated in NPD 7330.1 (for hyperlink see paragraph 2.5.2), Approval Authorities for Facility Projects.

2.6.7.2 The NASA Form 1509 must provide a full explanation of the proposed facility project, include an accurate and concise description, scope, and justification of the need, and a full disclosure of required resources (see Appendix A, Definitions, Full Disclosure Concept). Line entries on the form shall be completed in accordance with the instructions in Appendix C, Forms and Instructions. When preparing a 1509 for a discrete project, the project scope, cost, and justification must be consistent with the long form writeup.

2.6.7.3 When approved, the 1509 authorizes and directs implementation of the facility project contingent on funds availability. One copy of each locally approved (routine work) NASA Form 1509 and NASA Form 1510 (when applicable) shall be forwarded to the Headquarters Director, Facilities Engineering Division, not later than 10 working days prior to the start of construction.

2.6.8 NASA Form 1510.

2.6.8.1 NASA Form 1510 must be prepared for all projects with an estimated cost of $75,000 or more and must accompany each NASA Form 1509 submitted to Headquarters.

2.6.8.2 The NASA Form 1510 must be used as a summary page for all cost estimate packages developed for facility projects. This includes cost estimates developed as part of a PER (see paragraph 3.18.3, Section III: Engineering and Budget Estimate); cost estimates developed for projects not requiring a formal PER; and cost estimates at the 30, 60, 90, and 100-percent stages of final design.

2.6.8.3 Costs shown on page 2 of NASA Form 1510 shall be divided into the major elements contained in the cost estimate of the project budgetary submission document (i.e., interest in real estate, site development and utilities outside 5-foot line, buildings/structures within 5-foot line, other collateral equipment, and special features). The subdivision of these major elements shall be composed of work packages that can be utilized for procurement planning and subsequent cost control.

2.6.8.4 Line entries shown on NASA Form 1510 must be completed in accordance with the instructions provided in Appendix C, Forms and Instructions. In addition to the instructions in Appendix C see paragraph 3.20, Current Cost Estimate (CCE), for detail discussion of the CCE.

2.7 Facility Program Forms

A number of different forms and reports are separately described throughout this guide, which in total provide a management overview of the facility program. The various forms utilized in this guide and their instructions are detailed in Appendix C, Forms and Instructions.

2.8 Facility Project Management System

The Facility Project Management System (FPMS) is a comprehensive project management and reporting system for discrete, minor, and routine facility projects. It can be used to provide an analysis of the current status of the project and the work schedule.

2.9 Facilities Functional Performance Metrics

Center management, Facility Project Managers, and project teams are encouraged to develop and use metrics that will contribute to effective management of the Center's CoF program and projects. Each year NASA Headquarters requests Centers and Component Facilities to provide facilities functional performance metrics. These metrics are meant to reduce the amount of data Headquarters request from the field organizations. This request is normally in September with response requested by November. The metrics usually requested and the target percentages are as follows:

a. Metrics for facility projects as applicable are as follows:	

(1) Design of Projects. (Institutional, Program Direct, & Minor)	100-percent
Number of designs complete by Oct. 1 of FY Number of projects authorized for design for FY	
(2) 2nd Quarter Construction Contract Awards	100-percent
Number of projects awarded by Mar. 31 of FY Number of projects approved for construction in FY	
(3) Total Fiscal Year Construction Contract Awards	100-percent
Number of projects awarded by Sept. 30 of FY Number of projects approved for construction in FY	
(4) Total Construction Program Obligations	90-percent
Total CoF/Construction $ obligated in FY Total $ avail. (Prior years carryover & obligation authority in FY)	
(5) Discrete Project Obligations	90-percent
Total CoF/Construction $ obligated for FY (Institutional & PD) Total $ avail. (Prior years carryover & obligation authority in FY)	
(6) Minor Program Obligations	90-percent
Total CoF/Construction $ obligated in FY (Minor Program) Total Minor $ available (Prior years carryover & obligation authority in FY)	
(7) Construction Cost Growth	5-percent
Final contract cost in $ Original contract cost in $ for all budgeted work	
(8) Construction Time Growth	5-percent
Final duration in days Original contract duration in days for all budgeted work	
(9) Lost Time - Construction of Facilities Program Incident/Accident Rates	0-percent
N (Number of injuries, illnesses, or lost work days) x 200,000 EH (Total Number hours worked by all employees during year)	
(10) Contracting Officer Final Decisions	0-percent
Number of Contracting Officer Decisions Number of Projects	
(11) Case Litigated	0-percent
Number of Cases Litigated Number of Projects	
b. The following metrics are applicable to projects using best practices:	
(1) Construction Cost Growth	5-percent

Final contract cost in $ Original contract cost in $ for all budgeted work	
(2) Construction Time Growth	5-percent
Final duration in days Original contract duration in days for all budgeted work	
(3) Contracting Officer Final Decisions	0-percent
Number of Contracting Officer Decisions Number of Projects	
(4) Case Litigated	0-percent
Number of Cases Litigated Number of Projects	

| TOC | Preface | Chapter1 | Chapter2 | Chapter3 | Chapter4 | Chapter5 | Chapter6 | AppendixA | AppendixB | AppendixC | AppendixD | AppendixE | AppendixF | AppendixG | AppendixH | image022 | image023 | Image3-1 | Image_G-1 | ALL |

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